

1. An isolated polynucleotide comprising a nucleic acid molecule selected from the group consisting of:
  - a) the polynucleotide of SEQ ID NO:1;
  - b) the polynucleotide of SEQ ID NO:5;
  - c) the polynucleotide of SEQ ID NO:6;
  - d) the polynucleotide of SEQ ID NO:7; and,
  - e) a polynucleotide that is capable of hybridizing to a polynucleotide of a)-d)under conditions of moderate stringency that include 50% formamide, 6X SSC at about 42°C, wherein the polypeptide encoded by the polynucleotide binds an IL-1R family member.

2. An isolated polynucleotide comprising a nucleic acid molecule that encodes a polypeptide selected from the group consisting of:

- a) a polypeptide comprising SEQ ID NO:3;
- b) a polypeptide comprising SEQ ID NO:8;
- c) a polypeptide comprising SEQ ID NO:9;
- d) a polypeptide comprising SEQ ID NO:10;
- e) a polypeptide that is at least 80% identical to a polypeptide of a)-d), wherein the polypeptide binds an IL-1R family member; and,
- f) a fragment of the polypeptide of a)-e), wherein the fragment binds an IL-1R family member.

3. An isolated polynucleotide comprising a nucleic acid molecule selected from the group consisting of:

- a) the polynucleotide nucleotide of SEQ ID NO:2; and
- b) a polynucleotide that encodes a polypeptide comprising SEQ ID NO:4;

and,

- c) a polynucleotide encoding a polypeptide comprising a polypeptide that is at least 80% identical SEQ ID NO:4, wherein the polypeptide binds an IL-1 family member.

63

- a) a polypeptide comprising SEQ ID NO:3;
- b) a polypeptide comprising SEQ ID NO:8;
- c) a polypeptide comprising SEQ ID NO:9;
- d) a polypeptide comprising SEQ ID NO:10;
- e) a polypeptide that is at least 80% identical to a polypeptide of a)-d),

wherein the polypeptide binds an IL-1R family member; and

- f) a fragment of a polypeptide of a)-e), wherein the fragment binds an IL-1R family member.

5. An isolated polypeptide comprising a polypeptide selected from the group consisting of:

- a) the polypeptide of SEQ ID NO:4;
- b) a polypeptide that is at least 80% identical to a polypeptide of a), wherein the polypeptide binds an IL-1 family member; and
- c) a fragment of a polypeptide of a) or b), wherein the fragment binds an IL-1 family member.

6. A vector comprising a polynucleotide of claim 1.

7. A vector comprising a polynucleotide of claim 2.

8. A vector comprising a polynucleotide of claim 3.

9. A host cell transformed or transfected with an expression vector of claim 6.

10. A host cell transformed or transfected with an expression vector of claim 7.

11. A host cell transformed or transfected with an expression vector of claim 8.

12. A method for preparing a polypeptide, the method comprising culturing a host cell of claim 9 under conditions promoting expression of the polypeptide.

13. A method for preparing a polypeptide, the method comprising culturing a host cell of claim 10 under conditions promoting expression of the polypeptide.

14. A method for preparing a polypeptide, the method comprising culturing a host cell of claim 11 under conditions promoting expression of the polypeptide.

15. An oligomeric polypeptide comprising a polypeptide of claim 4.

16. An oligomeric polypeptide comprising a polypeptide of claim 5.

17. An antibody that binds a polypeptide of claim 4.

18. An antibody that binds a polypeptide of claim 5.

19. A method for screening a test compound to determine its affect on the ability of a IL-1 zeta polypeptide to increase or decrease IL-12 expression and or TNF-alpha expression, the method comprising:

a) contacting a test compound and an IL-1 zeta polypeptide with cells capable of expressing IL-12 and/or TNF; and,

b) analyzing the culture for IL-12 and/or TNF,

wherein, if the IL-12 or TNF expression differs from the level of expression that is observed in the absence of test compound, the test compound affects IL-12 and/or TNF expression, and wherein, the IL-1 zeta polypeptide comprises a polypeptide selected from the group consisting of SEQ ID NO:3, SEQ ID NO:8, SEQ ID NO:9 and SEQ ID NO:10, or fragment of the polypeptide of SEQ ID NO:3, SEQ ID NO:8, SEQ ID NO:9, or SEQ ID NO:10 and the fragment is capable of upregulating IL-12 or TNF expression.

20. A method for increasing IL-12 production in an individual, the method comprising administering an IL-1 zeta polypeptide to the individual in an amount sufficient to increase IL-12 production, wherein the IL-1 zeta polypeptide comprises a polypeptide selected from the group consisting of SEQ ID NO:3, SEQ ID NO:8, SEQ ID NO:9 and SEQ ID NO:10, or fragment of the polypeptide of SEQ ID NO:3, SEQ ID NO:8, SEQ ID NO:9, or SEQ ID NO:10 and the fragment is capable of upregulating IL-12 or TNF expression.

21. A method for treating inflammation, the method comprising administering an antagonist of an IL-1 zeta polypeptide to an individual afflicted with an inflammatory condition, wherein the IL-1 zeta polypeptide comprises a polypeptide selected from the group consisting of SEQ ID NO:3, SEQ ID NO:8, SEQ ID NO:9 and SEQ ID NO:10, or

fragment of the polypeptide of SEQ ID NO:3, SEQ ID NO:8, SEQ ID NO:9, or SEQ ID NO:10 and the fragment is capable of upregulating IL-12 or TNF expression.

22. A method for treating auto-immune disease, the method comprising administering an antagonist of an IL-1 zeta polypeptide to an individual afflicted with an auto-immune disease, wherein the IL-1 zeta polypeptide comprises a polypeptide selected from the group consisting of SEQ ID NO:3, SEQ ID NO:8, SEQ ID NO:9 and SEQ ID NO:10, or fragment of the polypeptide of SEQ ID NO:3, SEQ ID NO:8, SEQ ID NO:9, or SEQ ID NO:10 and the fragment is capable of upregulating IL-12 or TNF expression.

23. The method of claim 22 wherein the auto-immune disease is selected from the group consisting of rheumatoid arthritis, SLE, myasthenia gravis, insulin-dependent diabetes mellitus, thyroiditis.

109990 05/23/00